Continued Implementation of Agricultural Nonpoint Source Components of the Leon River Watershed Protection Plan

Hamilton-Coryell Soil and Water Conservation District #506

Final Report TSSWCB Project #17-04

FUNDING PROVIDED THROUGH THE CLEAN WATER ACT §319(h) NONPOINT SOURCE GRANT FROM THE TEXAS STATE SOIL AND WATER CONSERVATION BOARD AND THE U.S. ENVIRONMENTAL PROTECTION AGENCY

Executive Summary

The Hamilton-Coryell and Upper Leon Soil and Water Conservation Districts (SWCDs), working cooperatively with the Texas State Soil and Water Conservation Board (TSSWCB) and the Natural Resources Conservation Service (NRCS), provided technical and financial assistance to agricultural producers in the Leon River watershed through a Clean Water Act §319(h) nonpoint source grant from the TSSWCB and the U.S. Environmental Protection Agency.

The development and implementation of water quality management plans (WQMPs) in the Leon River watershed continues to be a success. Through this project, a District Technician was hired and worked cooperatively with the TSSWCB and NRCS to provide agricultural producers with the opportunity to voluntarily implement best management practices (BMPs), which have a positive impact on water quality in the Leon River.

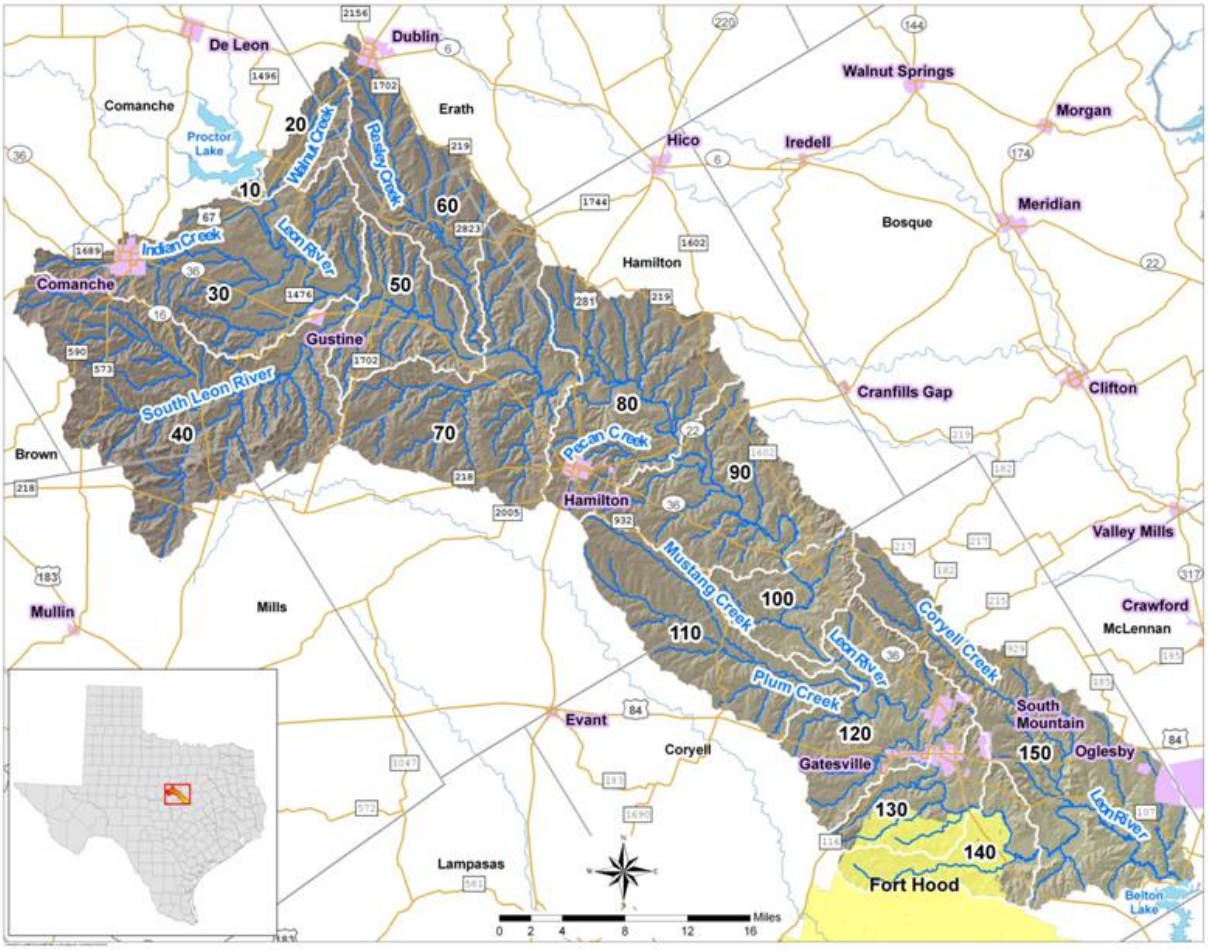
Through this project a total of 23 WQMPs were developed and implemented on approximately 7,812 acres. Examples of BMPs installed were Forage and Biomass Planting, Range Planting, Cross Fencing, and Prescribed Grazing, and Brush Management.

The District Technician and TSSWCB worked with the SWCDs and local producers to educate them on the WQMP program, proper soil sampling, and water quality. The District Technician and TSSWCB also presented at workshops, field days, and were active in continuing the development of the Leon River Watershed Protection Plan (WPP).

Implementation of WQMPs has and will continue to be a key component in the overall effort to improve water quality in the Leon River watershed.

Introduction

Between January 2005 and April 2008 stakeholders throughout the Leon River Watershed from Proctor Lake downstream to Belton Lake began to advocate for a more locally driven process than that which was occurring through the Total Maximum Daily Load (TMDL) project. Local stakeholders expressed interest in taking an active role in defining specific voluntary strategies to reduce bacteria loadings throughout the watershed and saw the WPP process as a more effective vehicle for pursuing this objective. Brazos River Authority (BRA) received a CWA §319(h) nonpoint source grant from the TSSWCB and the EPA to support development of this WPP. Parsons was hired to support BRA with the development of the WPP providing technical analysis, stakeholder coordination, and other expertise. The project team of BRA and Parsons received input from stakeholders of the Leon River watershed throughout this watershed planning process. TSSWCB Project 12-04 entitled Coordinating Implementation of the Leon River Watershed Protection Plan provided funding to hire a watershed coordinator and continue stakeholder meetings in order to implement and address EPA comments on the WPP.



Through the WPP development process, stakeholders identified several categories of potential nonpoint sources of bacteria in the watershed: forestland, cropland, rangeland, waste application fields, and residential/commercial/industrial. GIS shapefiles, livestock census, observations, stakeholder input, and Texas Commission on Environmental Quality's (TCEQ) draft TMDL report were all utilized to estimate distributions and the degree of contribution of these potential pollutant sources within the watershed. Based on these results, management measures were developed to address each of the potential sources. The timeline for full implementation of all the management measures in the Leon WPP is 10 years.

As identified during development of the WPP, nonpoint agricultural sources of pollutant loading may be addressed by implementing BMPs on agricultural operations. Agricultural producers, along with SWCDs, TSSWCB, and NRCS, have been collaborating to protect the natural resources in Texas for decades. Through the TSSWCB's WQMP Program, farmers and ranchers routinely implement BMPs on their land utilizing financial and technical assistance programs of SWCDs who receive state and federal funds from TSSWCB, EPA, and NRCS. A WQMP is a site-specific plan developed through, and approved by, SWCDs which includes appropriate land treatment practices, production practices, management measures, and technologies that prevent and abate agricultural and silvicultural nonpoint source pollution. The BMPs prescribed in a WQMP are defined in the NRCS Field Office Technical Guide. Because of this, and similar programs, the State of Texas has been able to demonstrate major successes in the improvement of water quality conditions through on-the-ground conservation results.

Expanding participation of agricultural producers in WPP implementation is essential to achieve water quality improvement. As an established and well-known local entity, the Hamilton-Coryell SWCD is uniquely situated to engage and support agricultural producers in watershed restoration and protection efforts, including implementation of appropriate BMPs to address nonpoint source pollution.

Technical support from the Hamilton-Coryell and Upper Leon SWCDs and NRCS personnel is critical for proper selection and placement of appropriate management measures on individual agricultural properties. However, due to the number of management plans that will be needed, a new position dedicated specifically to WQMP development in the watershed was necessary to provide direct assistance to agricultural producers, with emphasis on the sources and geographical areas within the watershed identified through the Leon WPP.

Program Development

A comprehensive watershed approach focused on the most significant potential sources of NPS pollution contributing to the current impairments was used for WPP development. Steering committees were developed by stakeholders to provide input on the watershed protection plan. Recommended BMPs were identified for implementation by the Steering Committee, focus groups, and partner agencies (Table 5.1 in the WPP). This project provides funding to

support implementation of recommended agricultural management measures identified for action in the WPP during the 10-year implementation schedule.

In 2014 the TSSWCB administered federal CWA §319(h) funds through a grant, TSSWCB project #14-03, to the Hamilton-Coryell SWCD for support of one District Technician that provided technical assistance to agricultural producers in developing and implementing WQMPs in the Leon River Watershed. The SWCD completed the initial project, reapplied in 2017, and was awarded TSSWCB project #17-06 to continue implementation of agricultural nonpoint source components of the WPP.

The District Technician is based in the Gatesville NRCS field office and worked under the direction of the SWCD, with assistance from the TSSWCB, NRCS, and Watershed Coordinator, as needed. The District Technician also assisted landowners in applying for and obtaining financial incentives to aid in implementation of BMPs prescribed in WQMPs.

WQMPs are developed according to the NRCS Field Office Technical Guide. Once the WQMP was developed, it was sent to the appropriate TSSWCB regional office for technical review and certification. Upon certification of the WQMP, the District Technician worked with the landowners to implement the BMPs prescribed in the WQMP. The District Technician worked with landowners to ensure proper installation and implementation of BMPs, tracked utilization of obligated financial incentives, and assisted landowners in utilizing these funds on schedule.

In addition to the development, installation, and maintenance of WQMPs, the District Technician worked with the SWCDs and local producers to educate them on the effective management of their operation, the WQMP program, proper soil sampling, and water quality. The District Technician attended field days, workshops and educational events in the Leon River watershed disseminating information on this project and other agricultural-related issues. The District Technician collaborated with the Leon River Watershed Steering Committee at meetings and individually in order to achieve project goals effectively and efficiently.

The District Technician and NRCS worked with landowners to implement BMPs. The examples of BMPs installed include:

Forage and Biomass Planting

This practice involves the planting of a grass(s) species on a cultivated field to prevent erosion, reduce runoff and non-point pollution, and create forage for livestock.

Range Planting

This practice is the act of planting a mix of grass species on open rangeland needing to be covered by vegetation. This practice increases ground cover, improves soil health, water quality, and provides grazing land for livestock.

Livestock Water Well

This practice provides access to a groundwater supply suitable for livestock watering, fire control, wildlife, and other agricultural uses . Planning of proper storage and pipelines will allow multiple drinking facilities to better utilize available resources.

Cross- Fencing

This practice helps divide a producer's property into sections so that a grazing plan can be followed. The fence allows pastures and rangeland to be rested from grazing pressure to allow for vegetation growth.

Other BMPs installed or planned are Nutrient Management (590), Herbaceous Weed Control (315), Conservation Crop Rotation (328), Upland Wildlife Habitat Management (645), Water Well (642), Livestock Water Pipeline (516), Watering facility (614), Heavy Use Area Protection (561), and Brush Management (314)

Conclusions

The Hamilton-Coryell and Upper Leon SWCDs, working cooperatively with the TSSWCB and the NRCS, provided technical and financial assistance to agricultural producers in the Leon River watershed through a Clean Water Act §319(h) nonpoint source grant from the TSSWCB and the U.S. Environmental Protection Agency.

The development and implementation of WQMPs in the Leon River watershed continues to be a success. There is a need for this project to continue and grow its efforts. With more funding for financial assistance and more WQMPs developed, significant load reductions and further improvement of water quality can be achieved.

A total of 23 WQMPs were developed and implemented on approximately 7,812 acres. The types of BMPs installed were Forage and Biomass Planting, Range Planting, Cross Fencing, Prescribed Grazing, and Brush Management. Below is a map showing the WQMPs developed and implemented in the watershed.

The District Technician and TSSWCB worked with the SWCDs and local producers to educate them on the WQMP program, proper soil sampling, and water quality. The District Technician also presented at workshops, field days, and was active in continuing the implementation of the Leon River WPP.

TSSWCB has partnered with the Hamilton-Coryell SWCD to continue this effort for another three years. The new project will continue utilizing CWA Section 319(h) grant funding to help landowners implement BMPs in the watershed.

Water Quality Management Plans Developed in the Leon River Watershed